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ABSTRACT

In 1978 the Springfield, Massachusetts school system began using sociometric techniques to analyze classroom social structure in grades 3-6 in order to provide feedback to teachers and data for evaluating the progress of integration. The sociogram asked students to choose whom they would work with on a school project, eat lunch with, pair up with for a field trip, play a game with, sit with in class, and invite to a party. Students were also asked to indicate their newest friend. Computer analysis of responses allowed for the preparation of a report, listing the extent of cross-racial selections by race and sex subgroup, isolates, most popular students, and possible cliques. The analysis indicated that there has been steady progress toward increased integration, with students making more friends across racial lines now than four years ago (two years after implementation of a court-ordered busing plan). The sociogram reports have been of some assistance to teachers in their efforts to encourage cross-racial friendships, and have also been useful in determining areas of need within the school system as a whole. Copies of the sociogram and of a sociogram report appear in appendices to this report. (CMG)

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SPRINGFIELD PUBLIC SCHOOLS
Springfield, Massachusetts

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Computer Analysis of Classroom Social Structure: Assistance for Teachers In Their Efforts to Enhance Integration

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UD 023 167

RESEARCH DEPARTMENT
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As evaluator of state-funded desegregation programs in the Springfield Public Schools, my first objective was to develop reliable, valid, and efficient methods of measuring the progress of integration in our school system. The decision was made early in 1978 to utilize a sociometric instrument citywide in Grades 3-6 to analyze classroom social structure, providing feedback for teachers and also providing data of use in evaluating the progress of the school system toward greater integration. A computer program to generate the above information was subsequently developed to the extent that the Springfield School System has the capability of system-wide analysis of student progress socially as well as academically. Computer generated reports of classroom sociograms indicate that the Springfield Public Schools are making progress in integration.

Development of The Sociometric Instrument

Sociometric instruments can be used by teachers in desegregated classrooms to more fully understand the social dynamics of their classrooms and to improve the integrated nature of their classrooms and can also be used as research tools to determine the effectiveness of certain teaching strategies on integration. Such an opinion was expressed by Taba (1962) in the early stages of desegregation:

> To make use of the potentialities of the social setting of the instructional group, several lines of action are needed. One is a more careful diagnosis of the social structure and the dynamics of the instructional group. (p. 166)

In her considerable work with sociograms in the school setting, Taba found sociometric instruments useful for determining student friendship preferences, for planning teaching strategies to overcome any social weaknesses observed, and for assessing changes in socialization resulting from the intervention strategies.

Lindzey and Borgatta (1954) felt that sociograms were a useful evaluation

tool. Among the qualities of sociometric instruments they listed were that sociometric instruments accurately describe the quality of interpersonal relationships, that they represent an important aspect of an individual's social environment, and that they are easy and quick to administer with little expense or classroom interruption.

Lane and Beauchamp (1955), discussing ways in which teachers can help children grow in roles of group membership, mention sociometric techniques as one way to learn about the social structure of the group:

> The sociometric techniques developed by Jennings give a picture of each child's choices of friends at a particular moment for a specific function. From such pictures emerge cliques, mutual choices and isolates, as well as the stars of the group. (p. 260)

Barclay (1966), in a later article, indicated that sociograms were:

> A good preliminary screening device, a method of obtaining teacher involvement in proposed approaches to the modification of learning difficulties, and a possible criterion of behavior change. (p. 1075)

In her book, Intergroup Relations for the Classroom Teacher, Charlotte Epstein (1968), defines the differences between desegregation (physical proximity) and integration (communication across racial and ethnic lines) and then discusses various teaching strategies to bring about integration in a desegregated setting. Use of sociometric techniques was one such strategy:

> Simple sociometric techniques can help the teacher diagnose patterns of association in the classroom objectively and systematically. Questions like, "Whom would you like to sit next to on the bus when we take our trip?" and "Which three people would you like to work with on your committee?" administered in written form, adequately reveal the degree of separation along group lines. If children repeatedly make the same choices for both classroom and extracurricular projects, we may conclude that personal attractiveness and habitual association are their only criteria for choices of companions, and that they need help in recognizing the importance of other attributes. (p. 96)

Gade (1977), stated that sociograms could be useful tools for classroom teachers and also for elementary school counselors to:

> Reduce detrimental classroom behavior such as an excessive number of cliques or a racial cleavage, and they can help social isolates become better integrated into the classroom social structure. (p. 136)

Thus, according to the sources above, sociograms can be useful for classroom teachers in desegregated classrooms to identify cliques, mutual choices, isolates, leaders, choice criteria, and, possibly racial cleavage.

According to several sources, sociograms can reveal certain aspects of the social structure in the classroom that teachers may not be aware of. In one study reported by Taba, Brady, Robinson, and Vickers (1951), sociograms revealed important problems in student interrelationships where the teachers had seen no problem as the sociograms "demonstrated with startling clarity cleavages in student relations that had passed unnoticed by teachers" (p. 130).

Gronlund (1950) studied the accuracy of teacher judgement on sociometric status of students. Students in forty, sixth grade classrooms, took a sociometric test, and their teachers made judgements concerning the sociometric status of their students. Gronlund found wide variations in teachers concerning their judgements, ranging from correlation coefficients of .268 to .838 with a mean of .595. He also found no relationship between teacher accuracy and the experience or sex of the teacher, and found a tendency for teachers to over-rate the sociometric status of students they most preferred and to under-rate the sociometric status of students they least preferred.

Blyth (1958), studying the social structure of junior high school groups of students, revealed in a sociometric test the cleavage between two groups of boys that had gone unnoticed by teachers because the two groups were not hostile or aggresive. This study has important implications for desegregated classrooms because often students, particularly younger students, may not be

inclined to be outwardly hostile towards students of a different race or ethnic group. A sociogram, however, might reveal definite cliques that are not outwardly apparent.

A later study by Bonney (1974) showed that "teachers . . . could not identify the poorly accepted students as well as they could the well accepted ones" (p. 135). As Jennings (1948) made so clear over 30 years ago, even though teachers might find out much about the classroom social structure through observation,

> "They still have no way of knowing who may have wanted to join a group and who was left out, or did not know how to go about it, or was afraid of being rebuffed". (p. 12)

What these studies show, as well as those previously mentioned, is that teachers are limited in their perceptions of the social dynamics of their classrooms and that sociometric instruments can be useful in providing teachers with a more accurate assessment of the social structure in their classrooms.

While sociometric instruments may be helpful to teachers, are they valid and reliable measuring instruments? Studies conducted to determine the validity and reliability of sociograms have been encouraging. Barclay (1966) summarizing some of the research in this area, concluded that student selections of sociograms were found to have considerable concurrent validity and high reliability coefficients initially with declines over time.

White (1969) also examined the reliability and validity of sociometric instruments. His studies revealed considerable correspondence between sociometric test selections and the actual selections of students in an activity, work, or play situation. Reliability in over twenty studies showed a high degree of consistency in choice status in classroom groups over a period of several months, with stability coefficients ranging from .67 to .84.

Remmers (1963), writing in the Handbook of Research on Teaching, concludes

that sociograms appear to be reliable, at least short term, but that standard statistical procedures in determining reliability are difficult to apply. Sociograms, in Remmers opinion, also appear to be valid though standard techniques again are difficult to apply. According to Remmers, sociograms are most valid if students feel that the results will be used to form various work or play groups within the classroom, as originally suggested by Moreno.

The sociogram developed for use in the Springfield Public Schools (see Appendix A) consists of seven questions with one possible choice for each. (Though multiple choices are more frequent, in other sociogram studies, such choices complicate the data and raise questions as to the relative status of a #1 choice as opposed to a #2 or #3 choice.) Some studies have also asked students to list three choices but only examined first choices. Five of the seven questions concern classroom situations which have been frequently listed in the available literature and which teachers could actually respond to. Question 6, a less common item than the previous five, can provide teachers with information on new friendship ventures being undertaken, perhaps new cross-race friendships. The final question, probably the most socially demanding question, is the only question in reference to a setting outside the school, i.e. the home, and therefore can provide a different perspective on student friendships than the previous six items, perhaps a measure of "at home" acceptance rather than "at school" acceptance.

Computer Analysis

Despite the ease of construction and administration of sociometric instruments, the valuable insight they can provide for teachers, and their apparent validity and reliability, and despite the fact that sociometry has existed for almost 50 years, there have been, "few attempts to systemize or standardize teacher reporting in the area of social achievement" (Markus and

Barasch, 1982, p. 2). The reason for the lack of acceptance in the use of sociometry, despite the fact that it has existed for almost 50 years, is, in the opinion of the authors, "related to difficulties in converting sociometric choices into data and graph forms which are readily comprehensible to practitioners" (p. 2). The authors designed a computer program which can plot maps detailing the social structure of classroom groups in order to assess changes in intergroup attitudes and relationships. The advantage to their techniques is that, by using the computer, only a minimum of teacher effort is needed (i.e. in administering the instrument). The computer does the work of compiling the results in a form useful to the teachers.

In conclusion, the authors stated that:

> Legal regulations can force children to sit in the same class together; but contact of this type does not necessarily lead to ethnic integration. Study of what actually happens between children in the classroom can fulfill a vital role in helping us understand and promote those social goals which we avow; the instrument described above makes a modest attempt in that direction. (p. 9)

In order to generate sociogram reports for classroom teachers more efficiently, the Springfield Public Schools has developed a computer program in BASIC to analyze results of sociometric instruments. The sociogram report (see Appendix B) consists of a matrix of students and their selections, a listing of the number of cross-racial selections made by each student and the number of times each student was selected, and a table listing the number of students, number of cross-racial selections, number of total selections, actual CRS rate (number of CRS/number of total selections), and the expected CRS rate for each race-sex subgroup and totally. Impetus for computation of an expected CRS rate came from Campbell, Kruskal and Wallace (1966) and Nutall (Note 1).

Campbell et al. were perhaps the pioneers in use of expected selection rates in sociometry in their study of classroom seating arrangements where

voluntary seating was allowed. In their opinion,

> The number of adjacencies by itself . . . is not suitable as an index. For one thing, it is clearly influenced by the total number of students and by the proportions of Negro and white students. Some kind of baseline and yardstick are necessary . . . We have used a baseline and yardstick corresponding to expected number and standard deviation of adjacencies derived from a randomness assumption. (p. 2)

The index derived by Campbell et al. compared the actual observed adjacencies to the number of adjacencies expected in a random situation dependent upon the number of white and black students in the classroom. Their index of integration (I) was calculated using the following formula:

$$I = (A - EA)/rA$$

where

A = observed number of adjacencies
EA = expected number of adjacencies
rA = standard deviation of the number of adjacencies under randomness

Nutall (Note 1) used a variation of the index developed by Campbell et al. developed from binomial probabilistic theory, essentially a ratio of the observed or actual pairings to the number of pairings expected randomly. Using the notation above, Nutall's index could be expressed as:

$$I = \frac{A}{EA}$$

The expected CRS rate statistic used in the Springfield computer program is derived in a similar fashion to that of Nutall, with one essential difference. Where Nutall's EA (expected number of cross-racial pairs) represents the expected number of interracial pairings and is calculated using the number of white, black and Hispanic students in the room, our EA (expected number of cross-racial selections) is derived by using the number of white, black and Hispanic students in each sex subgroup, as students overwhelmingly select students from their own sex subgroup. This enables calculation of I for not only the entire class, but for each race-sex subgroup of the class.

Further, this index does not penalize a particular race-sex subgroup for the opportunity to select same race-other sex students.

Example: Classroom X has the following race-sex composition:

5 White Boys
4 White Girls
3 Black Boys
6 Black Girls
4 Hispanic Boys
4 Hispanic Girls

There are 12 boys in the class. A boy would usually make one of 11 male selections (self selections are not allowed). If selections by boys were totally random, since 7 out of the 11 possible selections are non-white, we could expect that 7 out of 11 (or 64%) of selections by white boys would be cross-racial. Since 9 of the 11 possibilities are non-black, we could expect that 9 out of 11 (or 82%) of selections by black boys would be cross-racial. Finally, since 8 of the 11 possible selections by Hispanic boys are non-Hispanic, we could expect that 8 of 11 (or 73%) of selections by Hispanic boys would be cross-racial.

For girls, we could expect 10 of 13 (77%) of the selections by white girls, 8 of 13 (62%) of the selections by black girls, and 10 of 13 (77%) of the selections by Hispanic girls to be cross-racial. Expected CRS rate for combined groups (i.e. whites, blacks, Hispanics, boys, girls, total) is derived by algebraically summing two or more of the above.

The last page of the computer generated sociogram report examines the differences between the actual CRS rate and the expected CRS rates for each group using the Fisher Exact Probability Test, a test designed to calculate the significance of differences between two proportions (i.e. See Courts (1966)). Should there be any significant differences between the actual CRS rate and that expected by chance for any of the race-sex subgroups, this information is communicated to teachers for possible corrective action.

Results of Sociometric Testing

Insert Table 1 About Here

Systemwide compilation of classroom sociogram results indicate that there has been steady progress toward increased integration in the Springfield Public Schools. The percentage of selections that were cross-racial on the lower elementary level (Grades 3, 4), upper elementary level (Grades 5, 6) and totally over nine testing periods (Fall and Spring of each year, from Fall 1978 to Fall 1982) is shown in Table 1. According to results shown there, the cross-racial selection rate has increased from approximately 30% of all selections in 1978 to approximately 40% of all selections in 1982. The regression line slope in each case is positive (Lower: 1.23, Upper: 0.75, Total: 1.00).

Insert Table 2 About Here

It is also possible to compare on a systemwide basis the actual rate of cross-racial selections to that which could be expected if students selected totally at random based upon the racial distribution of the individual classrooms. The ratios of actual to expected cross-racial selections over nine testing periods is presented in Table 2. As seen there, there has been a consistent increase in the ratio at each level and totally from approximately one-half in 1978 to almost 2/3 in 1982. Totally, students are making 63% of the cross-racial selections that could be expected by chance compared to only 52% in 1978. The regression line slope in each case is positive (Lower: 1.43, Upper: 0.87, Total: 1.17).

Insert Table 3 About Here

The percentage of selections that were cross-racial for each race-sex

subgroup over nine testing periods is given in Table 3. As shown there, there has been a consistent increase in the cross-racial selection rate of each subgroup over time. Black students (particularly black boys) have recorded the largest CRS rate while white students, particularly white girls have had the lowest CRS rate. In general, boys have a greater tendency to select cross-racially than girls.

Insert Table 4 About Here

In Table 4 the ratios of actual to expected cross-racial selections for each race-sex subgroup over time are given. As above, black students have had higher ratios than either white or Hispanic students, and boys have consistently had higher ratios than girls. The data clearly indicates that stronger efforts are needed to encourage cross-racial choices by girls, particularly white and Hispanic girls.

The data presented in the tables above show conclusively that students in the Springfield Public Schools are making more friends across racial lines now than they were four years ago (two years after implementation of a court ordered bussing plan). Computer generated sociogram reports have been of some assistance to teachers in their efforts to encourage cross-racial friendships and have also been useful in determining areas of need within the school system as a whole. Continued use will, hopefully, further the gains which have already been made.

Reference Notes

1. Nutall, R. A behavioral index of integration. Paper presented at the New England Educational Research Organization Spring Conference, Lenox, Mass., 1980.

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Table 1

Percentage of Selections That Were Cross-Racial

Group	Testing Periods 1	2	3	4	5	6	7	8	9	Ave
Lower Elementary	31	31	32	31	37	36	38	38	40	35
Upper Elementary	28	28	32	33	33	33	32	31	37	32
Total	30	30	32	32	35	35	35	35	39	34

Table 2

Ratio of Actual to Expected Cross-Racial Selections

Group	Testing Periods 1	2	3	4	5	6	7	8	9	Ave
Lower Elementary	.55	.54	.55	.53	.62	.61	.62	.62	.65	.59
Upper Elementary	.49	.49	.53	.54	.54	.54	.52	.51	.61	.53
Total	.52	.52	.54	.53	.58	.58	.57	.57	.63	.56

Table 3

Percentage of Selections That Were Cross-Racial By Group

Group	Testing Period 1	2	3	4	5	6	7	8	9	Ave
W-Boy	22	23	27	24	28	26	27	28	31	26
W-Girl	20	19	22	23	25	28	26	26	27	24
B-Boy	48	47	48	50	53	51	53	55	53	51
B-Girl	40	37	40	39	44	41	43	42	49	42
H-Boy	40	43	41	40	43	42	39	40	47	42
H-Girl	40	40	34	34	40	41	41	35	46	39
White	21	21	24	24	26	27	27	27	29	25
Black	44	42	44	44	48	46	48	48	51	46
Hisp	40	42	38	37	42	42	40	38	47	41
Boys	32	32	35	34	37	35	36	37	40	35
Girls	28	27	29	30	33	34	34	32	37	32

Table 4

Ratio Of Actual To Expected Cross-Racial Selections By Group

Group	Testing Period 1	2	3	4	5	6	7	8	9	Ave
W-Boy	.51	.52	.59	.54	.60	.57	.57	.59	.62	.57
W-Girl	.45	.43	.46	.48	.52	.57	.51	.49	.54	.49
B-Boy	.65	.64	.66	.69	.71	.68	.71	.74	.75	.69
B-Girl	.55	.52	.56	.55	.61	.57	.61	.59	.69	.58
H-Boy	.48	.52	.50	.49	.55	.53	.50	.51	.60	.52
H-Girl	.48	.48	.42	.42	.50	.52	.53	.46	.59	.49
White	.48	.48	.53	.51	.56	.57	.54	.54	.58	.53
Black	.60	.58	.61	.62	.66	.62	.66	.66	.72	.64
Hisp	.48	.50	.46	.45	.52	.52	.51	.49	.59	.50
Boy	.55	.56	.59	.58	.62	.59	.60	.62	.66	.60
Girl	.49	.47	.49	.49	.55	.56	.55	.51	.60	.52

Appendix

Appendix A

SPRINGFIELD PUBLIC SCHOOLS
Springfield, Massachusetts

Elementary Sociogram

A. Please print the following information:

YOUR FIRST NAME_____ YOUR LAST INITIAL_____

TEACHER'S NAME_____ DATE_____

SCHOOL_____ ROOM_____ GRADE_____

B. Please answer each of the following questions by printing the first name and the last initial of one student from your classroom.

1. Which classmate would you choose to work with on a school project?

_____ First Name _____ Last Initial

2. Which student would you choose to eat with at lunch time?

_____ First Name _____ Last Initial

3. Which classmate would you pair up with to go on a field trip?

_____ First Name _____ Last Initial

4. With which student do you most like to play games?

_____ First Name _____ Last Initial

5. What student would you most like to sit next to in school?

_____ First Name _____ Last Initial

6. Who is your newest friend in the classroom?

_____ First Name _____ Last Initial

7. Which classmate would you choose to come to your home for a party?

_____ First Name _____ Last Initial

SOCIOGRAM REPORT FOR SCHOOL,ROOM ...MAY 1982 TESTING

SOCIOGRAM SELECTION TABLE

NO.	SELECTING STUDENT		PROJECT	LUNCH	TRIP	GAME	SIT NEAR	NEW FRIEND	PARTY
1	JOHN	1	PAUL	TONY	IAN	JUAN B	DANNY	DANNY	ROBERT
2	TONY	1	IAN	JOHN	IAN	IAN	DANNY	GWEN	DANNY
3	IAN	1	TONY	ROBERT	TONY	TONY	PAUL	LEE	PAUL
4	PAUL	1	JOHN	ROBERT	JOHN	ROBERT	JOHN	ANDREW	JOHN
5	ERNEST	1	0	LEE	LEE	LEE	LEE	LEE	LEE
6	DANNY	1	TONY	IAN	TONY	ERIC	TONY	PAUL	TONY
7	MICHELLE B	1	MELONIE	MELONIE	CATHY	MELONIE	CATHY	ROBIN	MELONIE
8	THERESA B	1	ROBIN	TERESA P	PAUL	MICHELLE M	PAUL	DESIREE	ROBERT
9	MELONIE	1	MICHELLE M	CATHY	ROBIN	ROBIN	CATHY	MICHELLE B	TONYA
10	CATHY	1	MELONIE	MICHELLE B	ROBERT	ROBIN	ROBIN	DESIREE	JUAN B
11	MICHELLE M	1	MELONIE	ROBIN	MICHELLE B	CATHY	MICHELLE B	DESIREE	DAISY
12	TERESA P	1	SHERI	THERESA B	SHERI	SHERI	PAUL	SHERI	PAUL
13	ROBIN	1	CATHY	CATHY	CATHY	MELONIE	CATHY	MELONIE	MICHELLE B
14	SHERI	1	THERESA B	TERESA P	THERESA B	0	0	MICHELLE M	0
15	ERIC	1	PAUL	JUAN B	ANDREW	TONY	MALACHI	GWEN	JOHN
16	CRAIG	1	SHERI	ANDREW	ANDREW	SHERI	ANDREW	GWEN	GWEN
17	LEWIS	1	0	MALACHI	ERIC	ANDREW	DERRICK	JUAN R	DAISY
18	DERRICK	1	JUAN B	ANDREW	JUAN B	JUAN B	ANDREW	JUAN B	JUAN B
19	ANDREW	1	DERRICK	TONY	TONY	JUAN R	TONY	PAUL	DERRICK
20	TONYA	1	DAISY	DAISY	DAISY	DAISY	DAISY	DAISY	DAISY
21	DESIREE	1	MELONIE	CATHY	DAISY	ROBIN	TONYA	MICHELLE B	GWEN
22	GWEN	1	DAISY	DAISY	DAISY	DESIREE	DAISY	DESIREE	DAISY
23	JUAN R	1	JOHN	ERIC	MALACHI	ANDREW	LEWIS	DESIREE	JOHN
24	LEE	1	ROBERT	ROBERT	ROBERT	ROBERT	ROBERT	ROBERT	ROBERT
25	ROBERT	1	LEE	LEE	LEE	LEE	LEE	DAISY	LEE
26	MALACHI	1	ROBERT	LEE	MICHELLE B	TONY	JOHN	DESIREE	LEE
27	JUAN B	1	DERRICK	TONY	IAN	DERRICK	IAN	DANNY	DERRICK
28	DAISY	1	TONYA	TONYA	TONYA	TONYA	TONYA	TONYA	TONYA

SOCIOGRAM REPORT FOR SCHOOL, ROOM *****PAGE 2

NUMBER OF CROSS RACIAL SELECTIONS BY EACH STUDENT

JOHN	2
TONY	1
IAN	2
PAUL	3
ERNEST	6
DANNY	1
MICHELLE B	0
THERESA B	2
MELONIE	1
CATHY	3
MICHELLE M	2
TERESA P	0
ROBIN	0
SHERI	3
ERIC	5
CRAIG	2
LEWIS	3
DERRICK	5
ANDRE'	5
TONYA	7
DESIREE	5
GWEN	5
JUAN R	0
LEE	0
ROBERT	0
MALACHI	0
JUAN G	7
DAISY	7

SOCIOGRAM REPORT FOR SCHOOL, ROOM ***** PAGE 3

NUMBER OF TIMES EACH STUDENT WAS SELECTED	
JOHN	9
TONY	14
IAN	7
PAUL	13
ERNEST	8
DANNY	5
MICHELLE B	7
THERESA B	3
VECONTE	9
CATHY	18
MICHELLE M	3
TERESA P	2
ROBIN	8
SHERI	6
ERIC	3
CRAIG	8
LEWIS	1
DERRICK	6
ANDREW	9
TONYA	9
DESIREE	7
GWEN	5
JUAN R	2
LEE	15
ROBERT	14
MALACHI	3
JUAN T	6
DAISY	16

SOCIOGRAM REPORT FOR SCHOOL, ROOM *****PAGE 4

CROSS RACIAL SELECTIONS BY GROUPS

GROUP	# OF STUDENTS	# OF CROSS RACIAL SELECTIONS	# OF TOTAL SELECTIONS	ACTUAL CRS RATE	EXPECTED CRS
WHITES	14	23	98	24,4681	89,5889
BLACKS	8	37	55	67,2727	76,573
HISPANICS	6	24	42	57,1429	77,7778
WHITE BOYS	6	15	41	36,5854	66,6667
WHITE GIRLS	8	8	53	15,0943	36,3636
BLACK BOYS	5	28	34	82,3529	75,3333
BLACK GIRLS	3	17	21	80,9524	81,8182
HISPANIC BOYS	5	17	35	48,5714	73,3333
HISPANIC GIRLS	1	7	7	100	100
ALL BOYS	16	52	110	47,2727	70,8485
ALL GIRLS	12	32	81	39,5062	53,0478
CLASS	28	84	191	43,9791	63,5539

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IN THE TABLE ON THE PREVIOUS PAGE, THE ACTUAL CRS RATE AS A PERCENT CAN BE COMPARED TO THE CRS RATE YOU WOULD EXPECT BY CHANCE AS DETERMINED BY THE RACIAL PROPORTIONS OF EACH SEX SUBGROUP IN THE CLASS (SINCE MOST STUDENTS SELECT WITHIN THEIR OWN SEX SUBGROUP.)

IF THERE WERE ANY STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN THE ACTUAL CRS RATE AND THE EXPECTED CRS RATE, THEY HAVE BEEN STARRED BELOW. IF THE ACTUAL CRS RATE WAS SIGNIFICANTLY LOWER THAN THE EXPECTED RATE FOR A SUBGROUP, THIS WOULD MEAN THAT THIS PARTICULAR SUBGROUP MADE SIGNIFICANTLY FEWER CROSS-RACIAL SELECTIONS THAN YOU WOULD EXPECT BY CHANCE AND WOULD THUS BE AN AREA TO TRY TO IMPROVE UPON

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR WHITE STUDENTS*****

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR HISPANIC STUDENTS*****

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR WHITE BOYS*****

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR WHITE GIRLS*****

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR HISPANIC BOYS*****

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR ASIAN BOYS*****

*****THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE BETWEEN THE ACTUAL AND EXPECTED CRS RATE FOR BLACK GIRLS*****

END OF SOCIOGRAM REPORT FOR ROOM